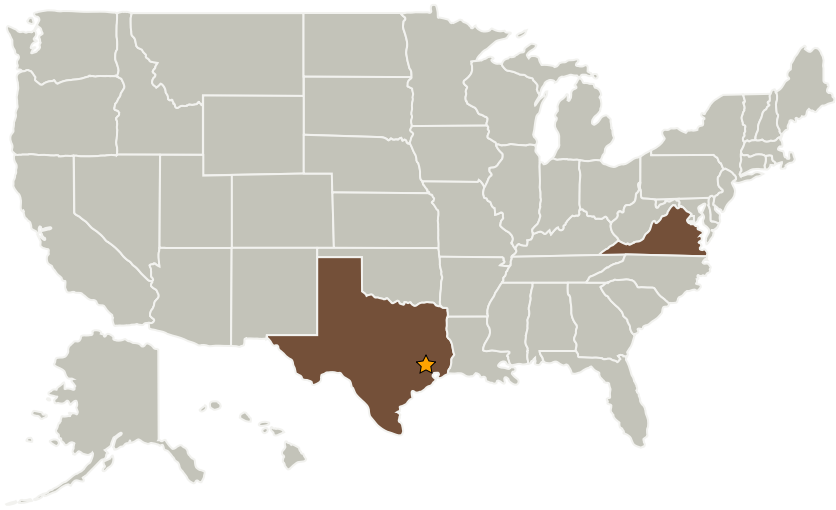
Conformal Space Suit Antenna Development for Enhanced EVA Communications and Wearable Computer Applications, Phase I

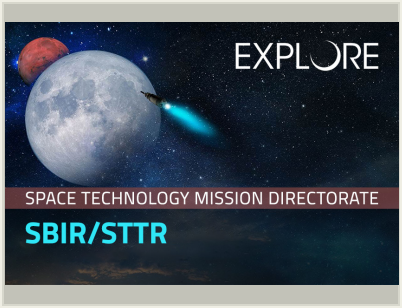
Completed Technology Project (2008 - 2008)

Project Introduction

As NASA prepares for future space missions and the return to the moon by 2020, astronauts will be required to spend more time exposed to the hazards of performing Extra-Vehicular Activity (EVA). Providing and maintaining reliable communications and overall information transfer is imperative during EVA operations not only to relay progress during the task but also to monitor the health and ability of the astronaut to perform in hazardous environments. Therefore, in order to improve astronaut mobility and primarily space to space communications, Applied EM, Inc. is proposing conformal, body-worn antennas that will be integrated into space suit designs to enhance EVA operations. In addition, antenna designs for wireless RF telemetry will be developed to enable the use of wearable computers for astronaut space operations. Recognizing the increased EVA operations anticipated for future missions, NASA has been studying and testing new space suit designs in efforts to improve the astronaut's ability to move his or her body while wearing the space suit and to carry out EVA tasks as efficiently and safely as possible. These new antenna designs will be developed to be compatible with the new suit designs.

Primary U.S. Work Locations and Key Partners





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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Applied EM, Inc.	Supporting Organization	Industry	Hampton, Virginia

Primary U.S. Work Locations	
Texas	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Thomas M Campbell

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.2 Extravehicular Activity Systems
    - TX06.2.3 Informatics and Decision Support Systems